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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/474,801	12/29/1999	KAORU ADACHI	378-366P	2763

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EXAMINER

ABDULSELAM, ABBAS I

ART UNIT PAPER NUMBER

2674

DATE MAILED: 02/11/2004

16

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/474,801

Applicant(s)

ADACHI, KAORU

Examiner

Abbas I Abdulsalam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al. (USPN 5585817) in view of Ichikawa et al. (USPN 6127998) and Ueno (USPN 6496224).

Regarding claims 1, 4, 8 and 10, Itoh teaches an image input/output apparatus including an image input section (20), and an image display section (10) arranged in a matrix form. The input section includes a photo detective portion (109), which receives light and converts it into an electrical signal. See column 4, lines 9-12, 39-42, and Fig 1. Itoh teaches the photo detective portion with respect to parallel blocks, 109', and 109" and output voltage V (out1), and V (out2). See column 6, lines 17-24 and Fig 5. Furthermore, Itoh teaches the V (out) as it relates to the display section including a transparent electrode (105), a thin film transistor (101), and gate electrodes. See Fig 2. Itoh teaches the supplying of electric signal to a scanning circuit. See column 1, lines 52-55. However, Itoh does not teach transfer path, output circuits that output signals from the vertical travel path in parallel column by column, and input circuits receiving

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signals from imaging section in parallel column by column. Itoh also does not disclose about parallel to serial and serial to parallel conversions. Ichikawa on the other hand teaches a light receiving portion (801), an LED displaying portion (803), a key matrix inputting portion (803) for adjustment, and a main board (453) from which an output is subjected to serial-parallel conversion. See col. 21, lines 32-67 and Fig 23. Ichikawa further teaches signal transfer switch (327) which can be opened and closed according to the pulse from the shift register (321). See Fig 17.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Itoh's imaging-displaying system to include Ichikawa's matrix inputting adjustment method based on the main board along with serial-parallel conversion mechanism. One would have been motivated in view of the suggestion in Ichikawa that the matrix inputting adjustment method in conjunction with serial--parallel conversion mechanism is functionally equivalent to the desired input and output circuits configurations. The use of matrix inputting adjustment and serial-parallel conversion mechanism helps function liquid crystal display as taught by Ichikawa.

Itoh has been described above. However, Itoh does not teach vertical transfer paths such that signals are transferred in parallel column by column wherein the imaging section outputs signals representing an image without horizontally transferring signal charges provided by vertical transfer paths. Ueno on the other hand teaches a solid-state imaging including a thinning read out mode in which signal charges are read out only from a portion of pixel columns along the vertical direction (see the abstract). Also, referring to Fig. 4, Ueno discloses that plural CCD (13) are provided with each of the vertical columns of the sensor unit (11), and vertically transfer

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the signal electron charges readout from the respective sensor units (11) by readout gate units (12).

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Itoh's display image operation to adapt Ueno's technique of reading out signal charges from pixel columns along the vertical direction. One would have been motivated in view of the suggestion in Ueno that reading out signals from columns and vertical transferring as demonstrated in Fig. 4 equivalently provide the desired outputting from the output circuits and imaging section. The use of vertical transferring of charges helps function the process of imaging operation as taught by Ueno.

Regarding claim 3, Itoh teaches about LCD. See column 4, lines 10-12.

Regarding claims 2 and 5-6, Ichikawa teaches an LCD element with respect to the use of charge holding capacitors of reflecting electrodes (312). See col. 14, lines 8-17, and Fig 16.

Regarding claims 7, 9 and 11, Ichikawa teaches serial to parallel conversion applying to signal outputs from the main board (453). See Fig. 23.

Regarding claims 12-14, Ueno teaches CCD solid imaging device with signal charges reading only from columns along the vertical direction.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following arts are cited for further reference.

U.S. Patent No. 6,452,634 to Ishigami et al.

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4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

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Washington, D.C. 20231

or faxed to :

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Abbas Abdulsalam

Examiner

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February 5, 2004



XIAO WU
PRIMARY EXAMINER